



DOCKET: FIS919990319US1

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

INVENTOR:	Harry J. Beatty et al.	)	EXAMINER:	Ali, S.J.
		)		
SERIAL NO.:	09/597,524	)	ART UNIT:	2127
		)		
FILING DATE:	June 20, 2000	)	DATE:	October 24, 2005
		)		
FOR:	Method of Using a	)		
	Distinct Flow of	)		
	Computational	)		
	Control as a Reusable	)		
	Abstract Data Object	)		

**DECLARATION UNDER RULE 131 OF JAY ANDERSON**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I, Jay Anderson, do hereby declare as follows:

1. I am a patent attorney for International Business Machines Corporation ("IBM"), the assignee of the above-identified patent application, and have overall responsibility for the preparation and prosecution of the subject application.

2. This is a declaration under the provisions of 37 CFR § 1.131 for the purpose of swearing back of a reference that was cited in the subject application. This declaration references an invention disclosure showing conception of this invention in this country prior to the September 29, 1999 filing date of Sievert et al. U.S. Patent No. 6,832,376 cited against this application, and due diligence from a time prior to that date until the application was filed.

3. The invention disclosure attached as Exhibit A and Exhibit B was submitted to me by Peter Elmendorf, one of the named co-inventors of the instant application, prior to September 29, 1999, the reference date of the Sievert '376 patent. The Exhibit A disclosure references an electronic document "bottle.prz," which is the drawing attached as Exhibit B. The disclosure of Exhibit A is dated prior to September 29, 1999, but actual dates and material not pertinent to conception of the invention have been redacted in view of their confidential nature.

4. Prior to September 29, 1999, I ordered a search to be made to determine the patentability of the invention disclosed in the invention disclosure attached as Exhibit A and Exhibit B. To the best of my knowledge and belief, I received the results of the search by early November of 1999.

5. After reviewing the aforementioned search results, I sent a communication to the inventors on November 11, 1999 reporting the results of the search, and requesting comments by them on the search results.

6. After receiving a response from the inventors concerning the search report, it was decided in or about December of 1999 to file a patent application on the invention disclosure attached as Exhibit A and Exhibit B, and the disclosure was assigned IBM Docket No. FIS9-1999-0319. At about the same time, as it was decided that patent applications would be prepared for two other related inventions made by Mr. Elmendorf and Mr. Beatty, IBM Docket Nos. FIS9-1999-0317 and FIS9-1999-0318. These other applications were later filed as serial nos. 09/597,523 and 09/597,525 on the same date as

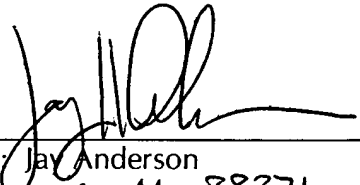
the instant application. These other two applications have since been issued as U.S. Patent Nos. 6,832,378 and 6,507,903, respectively.

7. Because of my backlog of patent application preparation, prosecution and other work, I decided to send this application, FIS9-1999-0319, as well as the other two applications, IBM Docket Nos. FIS9-1999-0317 and FIS9-1999-0318, to an outside law firm to prepare the application for filing with the U.S. Patent and Trademark Office as soon as reasonably possible, and more quickly than I could have done so.

8. On January 18, 2000, I called Peter Peterson, a partner in the law firm of DeLio & Peterson, LLC in New Haven Connecticut, to determine whether his firm could prepare and file this application and the other two referenced applications. After receiving an indication that the application could be prepared and filed by the DeLio & Peterson firm, on January 20, 2000 I sent the invention disclosure attached as Exhibit A and Exhibit B for this application as well as the disclosures for the other two referenced applications to Atty. Peterson and instructed him to prepare the patent applications.

9. I declare further that all statements made herein on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment or both, under §1001 of the Title XVIII of the United

States Code and that such willful false statement may jeopardize the validity of the application or any patent issuing thereon.

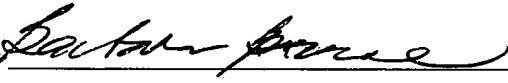
  
\_\_\_\_\_  
Name: Jay Anderson  
Reg. No. 38,371

24 October 2005  
\_\_\_\_\_  
Date

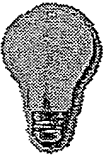
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to Mail Stop \_\_\_\_\_, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Name: Barbara Brown Date: 11/01/2005  
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Signature

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	<b>Disclosure FIS8-1999-0335</b>	
	Created By: Peter Elmendorf	Created On: [REDACTED]
	Last Modified By: [REDACTED]	Last Modified On: [REDACTED]
	*** IBM Confidential ***	

Required fields are marked with the asterisk (\*) and must be filled in to complete the form .

### Summary

Status	Under Evaluation
Processing Location	FIS
Functional Area	GBF Software Related Services, Applications and Solutions ... 600 <i>ACH</i>
Attorney/Patent Professional	Jay Anderson/Fishkill/IBM
IDT Team	[REDACTED]
Submitted Date	[REDACTED]
Owning Division	[REDACTED]
PVT Score	[REDACTED]

### Inventors with Lotus Notes IDs

Inventors: Peter Elmendorf/Fishkill/IBM, Harry Beatty III/Fishkill/IBM

Inventor Name > denotes primary contact	Inventor Serial	Div/Dept	Manager Serial	Manager Name
Elmendorf, Peter C.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Beatty III, Harry J.	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

### Inventors without Lotus Notes IDs

### IDT Selection

IDT Team: [REDACTED]	Attorney/Patent Professional: Jay Anderson/Fishkill/IBM
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Response Due to IP&L [REDACTED]

### Main Idea

Title of disclosure (in English): [REDACTED]

Method of using a distinct flow of computational control as a reusable abstract data object.

Idea of disclosure: [REDACTED]

1. Describe your invention, stating the problem solved (if appropriate), and indicating the advantages of using the invention.

In parallel programming, it is customary to use one or more threads within a process. Each thread is assigned a specific unit of work to perform, generally in parallel, and when the work is finished, the threads cease to exist. There is a cost to create a thread, terminate

a thread; and to manage a thread. The cost has both machine-cycle components and programming complexity components. The programming complexity components are a source of errors in implementation and design of the software.

The prevailing paradigm in the use of threads treats the threads and data differently. There is control flow (threads), and there is data. The resulting dichotomy creates an environment which tends to place fetters on the kinds of solutions envisioned, and creates complexity and resulting error-proneness during implementation.

The invention implements a new paradigm for the use of threads in a parallel environment. The invention essentially creates a thread and captures it, binding it to a data object which, from the programmer's perspective, is abstract. This allows a thread (or flow of control) to be treated as a data object by the software.

This has a number of advantages.

1. Threads are created once and reused as needed. This avoids thread creation and destruction costs found in prevailing approaches.
2. Threads are data objects. This eliminates the prevailing dichotomy between control and data, giving a programmer a greater mental field on which to envision solutions to problems.
3. Because threads are data objects, previously impossible operations are available to a software developer. These operations include, but are not limited to, attaching threads to other data objects (for later use in execution), passing threads (control flows) as parameters, etc.



bottle.prz

2. How does the invention solve the problem or achieve an advantage, (a description of "the invention", including figures inline as appropriate)?

The invention implements an abstract data object which has a thread waiting on it. The data object can be passed around and incorporated into the data structures of a program, as can any traditional data object. When desired, the software assigns particular work to the data object, which the waiting thread then wakes up and does. After performing the work, the thread again waits for more work. The work may be assigned from any section of the application, at any desired time. The thread is not destroyed until the application program decides to do so.

This approach greatly simplifies the creation of software that needs to leverage parallel operation by use of threads. By abstracting the thread, burdensome details are removed from the purview of the programmer. By encapsulating a waiting thread as a data object, the programmer has more degrees of freedom and greater range of solutions, because the dichotomy between control flow and data is bridged.

3. If the same advantage or problem has been identified by others (inside/outside IBM), how have those

others solved it and does your solution differ and why is it better?  
I am not aware of anything like this.

4. If the invention is implemented in a product or prototype, include technical details, purpose, disclosure details to others and the date of that implementation.

There is already a working implemenation. It is intended to be placed in the DCL compiler product, release date [redacted] however, beta release may occur much earlier [redacted]

**\*Critical Questions ( Questions 1 - 7 must be answered)**

**\*Question 1**

On what date was the invention workable? [redacted] Please format the date as MM/DD/YYYY (Workable means i.e. when you know that your design will solve the problem)

**\*Question 2**

Is there any planned or actual publication or disclosure of your invention to anyone outside IBM? [redacted] Yes No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:

Date Published or Issued:

Are you aware of any publications, products or patents that relate to this invention? [redacted] Yes No

If yes, Enter the name of each publication or patent and the date published below.

Publication/Patent:

Date Published or Issued:

**\*Question 3**

Has the subject matter of the invention or a product incorporating the invention been sold, used internally in manufacturing, announced for sale, or included in a proposal? [redacted] Yes No

Is a sale, use in manufacturing, product announcement, or proposal planned? [redacted] Yes No

If Yes, identify the product if known and indicate the date or planned date of sale, announcements, or proposal and to whom the sale, announcement or proposal has been or will be made.

Product: [redacted]

Version/Release: [redacted]

Code Name: [redacted]

Date: [redacted]

To Whom: [redacted]

If more than one, use cut and paste and append as necessary in the field provided.

**\*Question 4**

Was the subject matter of your invention or a product incorporating your invention used in public, e.g., outside IBM or in the presence of non-IBMers? [redacted] Yes No

If yes, give a date. Please format the date as MM/DD/YYYY.

**\*Question 5**

Have you ever discussed your invention with others not employed at IBM? [redacted] Yes No

If yes, identify individuals and date discussed. Fill in the text area with the following information: the names of the individuals, the employer, date discussed, under CDA, and CDA #.



<b>Question 6</b> Was the invention, in any way, started or developed under a government contract or project?	Yes No Not sure
If Yes, enter the contract number	

<b>Question 7</b> Was the invention made in the course of any alliance, joint development or other contract activities?	Yes No Not Sure
If Yes, enter the following: Name of Alliance, Contractor or Joint Developer	
Contract ID number	
Relationship contact name	
Relationship contact E-mail	
Relationship contact phone	

<b>Question 8</b> Have you submitted, or are you aware of, any related disclosure submission?	Yes No
If Yes, please provide the title and docket or disclosure number below:	

<b>Question 9</b> What type of companies do you expect to compete with inventions of this type? <i>Check all that apply</i>
<input type="checkbox"/> Manufacturers of enterprise servers
<input type="checkbox"/> Manufacturers of entry servers
<input type="checkbox"/> Manufacturers of workstations
<input type="checkbox"/> Manufacturers of PC's
<input type="checkbox"/> Non-computer manufacturers
<input type="checkbox"/> Developers of operating systems
<input type="checkbox"/> Developers of networking software
<input type="checkbox"/> Developers of application software
<input type="checkbox"/> Integrated solution providers
<input type="checkbox"/> Service providers
<input type="checkbox"/> Other (Please specify below)

**Patent Value Tool (Optional - this may be used by the inventor and attorney to assist with the evaluation)**

(The Patent Value tool can be used by you or the evaluation team to determine the potential licensing value of your invention.)

These are the answers which were entered into the Patent Value Tool.

### Market

What is the anticipated annual market size (in dollars) that will be captured by your invention?

**Question 1 - How new is the technical field?**

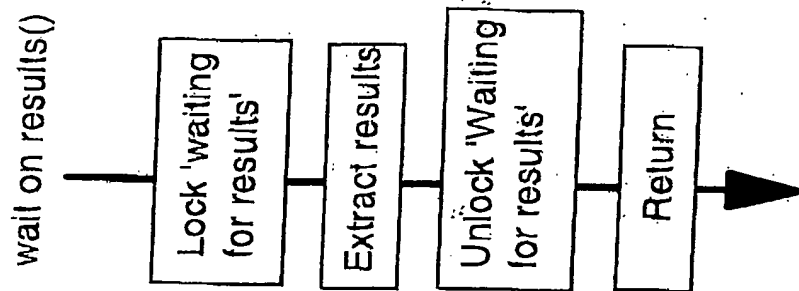
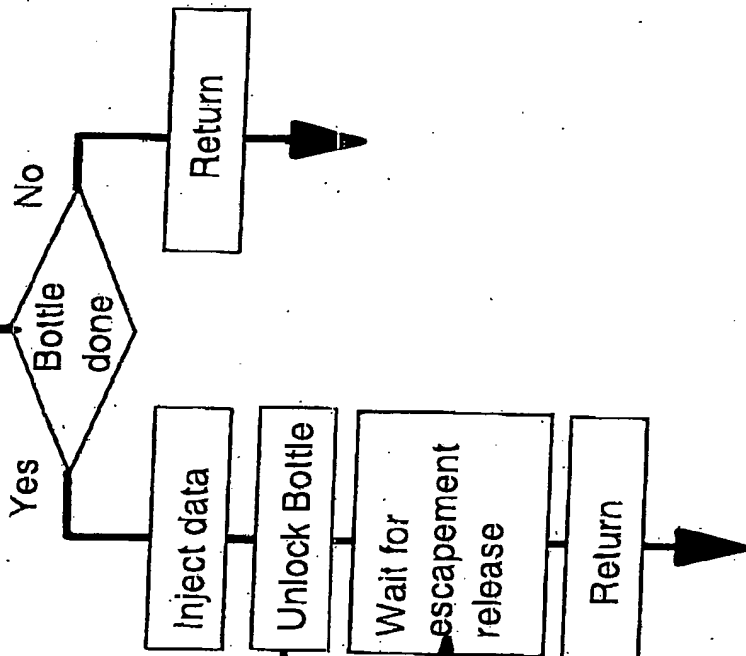
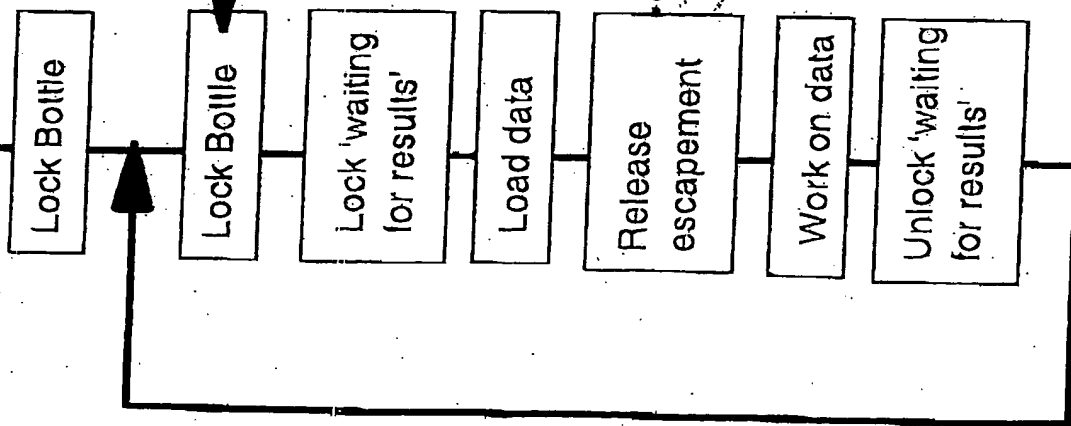
**Question 2 - How central is the invention to the product(s) which might be expected to contain the invention?**



**E  
X  
H  
I  
B  
I  
T  
  
B**

Create Thread  
(in a bottle)

escapement(work, fcn)



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